

507, 503

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



13 SEP 2004

(43) International Publication Date
18 September 2003 (18.09.2003)

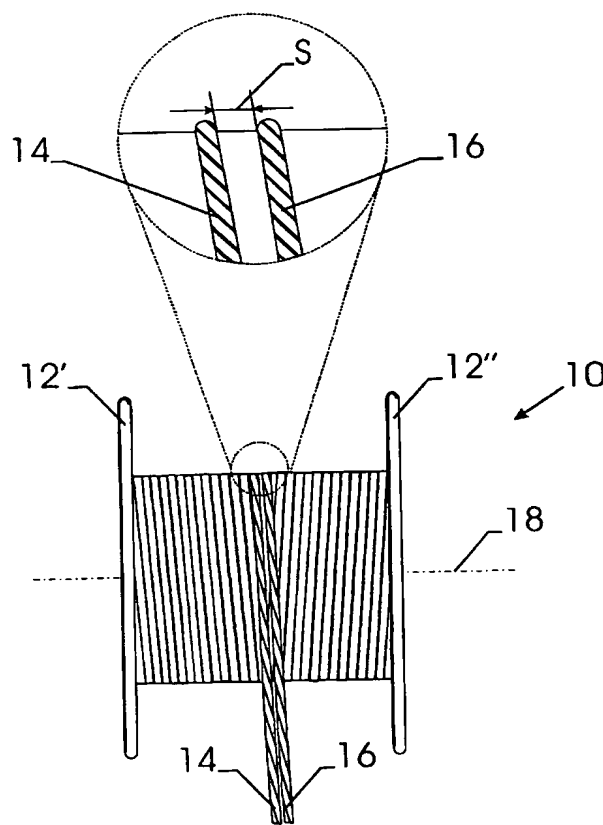
PCT

(10) International Publication Number
WO 03/076321 A1

- (51) International Patent Classification⁷: **B65H 55/04**
- (21) International Application Number: **PCT/EP02/13688**
- (22) International Filing Date: 3 December 2002 (03.12.2002)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02100243.1 13 March 2002 (13.03.2002) EP
- (71) Applicant (for all designated States except US): **N.V. BEKAERT S.A.** [BE/BE]; Bekaertstraat 2, B-8550 Zwevegem (BE).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **MULLEBROUCK, Rik** [BE/BE]; Ten Dries 3, B-8930 Rekkem (BE). **SABBE,**
- (74) Agent: **MESSELY, Marc**; N.V. Bekaert S.A., D.I.E., Bekaertstraat 2, B-8550 Zwevegem (BE).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SI, SK,

[Continued on next page]

(54) Title: SPOOL FILLED WITH MULTIPLE ELONGATED ELEMENTS WOUND CLOSELY TOGETHER



(57) Abstract: A spool (10) filled with two or more elongated elements (14, 16) such as steel cords wound in parallel and in several windings upon the spool is provided. The distance *s* between two neighboring elongated elements, as measured along a line parallel to the axis (18) of the spool (10), is not more than 10 mm along 90 % of the length of each elongated element. The advantage is that unwinding problems such as sags and downstream processability problems are avoided.



WO 03/076321 A1

WO 03/076321 A1



TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

— *with international search report*